Wegrzyn, John

From: Krawczyk, Keith (DEQ) <KRAWCZYKK@michigan.gov>
Sent: Friday, January 08, 2016 1:55 PM
To: Wegrzyn, John
Cc: Kline, David (DEQ); Devantier, Daria W. (DEQ); Hahnenberg, James; Baltusis, Matt (DEQ)
Subject: RE: Shiawassee Superfund Site, PCB advisories

Follow Up Flag: Follow up
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Thanks John,

Did you plan on replying directly to Mr. Lang?

My response/rationale would be consistent with your line of thinking, although I admit I do not know what amount of exposure as far as % of diet containing contaminated prey species results in bioaccumulation, or what impact episodic or chronic exposure duration within a contaminated area would have; or, the amount of meals of impacted waterfowl, deer liver, etc, might put humans at risk. Can we assume that the frequency of such waterfowl meals or deer liver would be consumed less than the consumption of (muscle) beef, or milk, which was categorized as a lesser risk (see below)? Perhaps there are exposure scenarios/risk assessment that should be vetted further, for various species. Also, the impact to receptors down-gradient of the site (i.e., there are fish consumption advisories along the main stem of the Shiawassee River) should be recognized as a data gap also.

I will add the following (see below) for your consideration; and, I would ask where Mr. Lang 'read' that rabbits and deer (liver?) might also be contaminated. To my knowledge, neither rabbits (hasenpfeffer, as Elmer Fudd/bugs bunny used to call it) nor deer, or waterfowl were ever tested. ...a closer review of the risk assessment is warranted.

As far as human health, see below, which identifies how human health (exposures) were addressed/evaluated. The ROD identifies a sediment cleanup goal that would be protective of (not only fish), but mink and kingfishers as well. As these species are more sensitive than waterfowl, if we were protective of those species, we would be protective of waterfowl as well. Mr. Lang's question points to perhaps a lack of a comprehensive database analytical results and evaluation of potential impact to hunters as well as fisherman, and other piscivorous or terrestrial receptors, such as raptors and passerine species.

From the ROD:
VI. Summary of Site Risks

A. Human Health

Risks were assessed based on current land-use conditions for residents living near the site, for adolescents swimming in the river, and for adolescents trespassing in the wetlands adjacent to the Cast Forge property, or trespassing on the Cast Forge property itself. Based on the concentrations of PCBs available in the environment - primarily in the floodplain and river soils and sediments – risk levels greater than 1 x 10-6 were evident. The risk assessment indicates that nearby residents have the highest potential risks. The majority of the cancer risk for nearby residents is associated with consumption of fish caught in the contaminated reach of the river. Other pathways of concern for this group in order of highest to lowest risk are vegetable consumption, milk consumption, beef consumption, incidental ingestion of floodplain sediment, and dermal contact with floodplain sediment. Non-cancer health risks were also estimated for the same human groups. Based on the findings of the risk assessment, consumption of fish by nearby residents was the only exposure pathway that was estimated to potentially cause adverse non-cancer health effects.

Section 8 of the BRA contains the Ecological Assessment. In summary, it concludes that PCBs were detected sporadically in some root and earthworm samples in the floodplain ecosystem, indicating the potential for bioaccumulation. Based on very limited sampling, PCBs were not detected in tissue samples of mammals (muskrats and raccoons) collected from the South Branch of the Shiawassee River during the RI. Although they were not specifically tested, the Ecological Assessment does conclude that both fish-eating birds and mammals (e.g. mink) are potentially at risk from the presence of PCBs in river sediments and biota.

I am available to discuss this further at your convenience.

Keith

From: Wegrzyn, John [mailto:Wegrzyn.John@epa.gov]
Sent: Wednesday, January 06, 2016 10:09 AM
To: Krawczyk, Keith (DEQ)
Cc: Kline, David (DEQ); Devantier, Daria W. (DEQ); Hahnenberg, James
Subject: RE: Shiawassee Superfund Site, PCB advisories

Keith, just a couple comments for your consideration from my perspective related to Mr. Jim Lang's email. The question Mr. Lang poses doesn't necessarily have an easy straightforward answer.

Since waterfowl are migratory birds and most ducks and geese do in fact migrate as opposed to being resident to a particular area, it likely wouldn't be easy (you might get lucky through congener fingerprinting) to rule out if PCBs in a specific bird in fact came from the Shiawassee River area (or from PCB sources attributable to any other particular area of the flyway). That also would likely be an issue for many categories of environmental contaminants (including heavy metals, pesticides, etc.) that waterfowl could be packing around.

Nevertheless, it's likely that waterfowl, especially if the birds are predominantly resident to the Shiawassee River area in question, as opposed to birds on the migration and are stopping over in the subject geographical area, could at least be exposed to PCBs from the site. After a quick Google Scholar search, I wasn't able to turn up a single report of results for any waterfowl tissue analyses from the geographical area in question. (Maybe MDNR may have some study results?)

Happy to consult more with you on this if you wish. ..... John

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From: Kline, David (DEQ) [mailto:KLINED@michigan.gov]
Sent: Tuesday, January 05, 2016 2:55 PM
To: Krawczyk, Keith (DEQ) <KRAWCZYKK@michigan.gov>; Devantier, Daria W. (DEQ) <DEVANTIERD@michigan.gov>
Cc: Wegrzyn, John <Wegrzyn.John@epa.gov>
Subject: FW: Shiawassee Superfund Site, PCB advisories

FYI.

From: Jim Lang [mailto:langsmailbox@gmail.com]
Sent: Tuesday, January 05, 2016 3:50 PM
To: Hahnenberg James
Cc: Kline, David (DEQ)
Subject: Shiawassee Superfund Site, PCB advisories

James Hahnenberg
Remedial Project Manager

U.S. EPA Region 5

Sir:

I'm interested in water quality, especially in Michigan. One particular source of concern is the South Branch of the Shiawassee River, EPA ID# MID980794473, contaminated with PCB.

State of Michigan fish advisories warn the public about eating fish from the South Branch, and I've read that rabbits and deer hunted in the floodplain may be contaminated, too.

However, there has been no mention that I'm aware of concerning the risk to human health from eating wild ducks killed in the Shiawassee watershed.

In past years, I've shot wood ducks in the bottom land of the East Branch (and eaten them), so I know there is a sizable population in the area. I've also seen mallard and teal in these waters and think it likely that other species are present as well.

Wikipedia's section on polychlorinated biphenyls says in part:

"Like many lipiphilic toxins, PCBs biomagnify up the food chain. For instance, ducks can accumulate PCBs from eating fish and other aquatic life from contaminated rivers, and these can cause harm to human health or even death when eaten."
https://en.wikipedia.org/wiki/Polychlorinated_biphenyl

Can you tell me whether duck hunters are warned of the danger and, if so, how?

Jim Lang
P.O. Box 1815
Royal Oak, MI 48068
248-259-0352

cc: MDEQ Superfund Program